

United States Patent [19]

McMahon

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[54] **SHARED SOCKET MULTI-CHIP MODULE
 AND/OR PIGGYBACK FIN GRID ARRAY
 PACKAGE**

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[57] ABSTRACT

An electronic package for an integrated circuit (IC). The package has a plurality of first pins extending from a laminated plastic/printed circuit board substrate. The pins are coupled to the integrated circuit and provide a means for mounting the package to an external printed circuit board. The package also has an internal circuit board that is coupled to both the substrate and the IC by a plurality of second pins. Mounted to the circuit board are passive and/or active electrical elements that are connected to the integrated circuit through the second pins. Some of the second pins may extend entirely through the substrate to directly couple the internal circuit board and electrical elements to the external printed circuit board. To improve the thermal impedance of the package, the integrated circuit is mounted to a heat slug which can be attached to a heat sink. The heat sink may also provide a substrate for the internal circuit board.

11 Claims, 4 Drawing Sheets

